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13. The public mobile access data network of claim 8, further comprising:
plural home agent routers configured as a virtual home agent network for one of
the mobile nodes.

14. The public mobile access data network of claim 12, wherein reciprocal control signaling between the home and foreign agents is reduced when the home and foreign agents are co-located.

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cm²⁵

16. The public mobile access data network of claim 15, wherein if one of the home agents in the virtual home agent network is dysfunctional, another of the home agents in the virtual home agent network forwards data to and from the mobile node.

17. The public mobile access data network of claim 15, wherein one of the home agents in the virtual home agent network closest to a corresponding node sending data to the mobile node via the Internet is selected to forward data to and from the mobile node.

18. The public mobile access data network of claim 17, wherein the closest home agent has a smallest routing metric relative to the corresponding node.

19. The public mobile access data network of claim 15, wherein one of the home agents in the virtual home agent network is co-located with a foreign agent router near a private data access network.

20. The public mobile access data network of claim 15, wherein one of the home agents uses a multi-exit discriminator parameter to advertise to the Internet a preferred entry point to the public mobile access data network.

21. The public mobile access data network of claim 1, further comprising:
a home agent mobility manager node coupled to a backbone of the Internet;
a home agent mobility tunnel server coupled to the backbone of the Internet;
plural foreign agents coupled to the home agent router for communicating with one or more mobile nodes over a radio interface,
wherein data tunnels between one of the home agent mobility tunnel servers and one of the foreign agents are established by the home agent mobility manager to communicate data with one of the mobile nodes.

22. The public mobile access data network of claim 8, wherein the home agent and foreign agent routers communicate using a mobile internet protocol and the tunnel includes a label switched path that uses multi-protocol label switching.

23. The public mobile access data network of claim 22, wherein as the mobile node moves from one foreign agent to another foreign agent, the home agent injects an address associated with the mobile node into the label switched path.

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31. The method in claim 30, wherein the public mobility service is provided independently of a mobility service offered by a radio access technology specific network.

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one or more of the mobile nodes; and

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presence near the Internet backbone.

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agent

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38. The method in claim 32, further comprising:
configuring plural home agents as a virtual home agent network for one of the
mobile nodes,

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39. The method in claim 38, wherein if one of the home agents in the virtual home agent network is dysfunctional, another of the home agents in the virtual home agent network forwards data to and from the mobile node.

40. The method in claim 38, further comprising:
one of the home agents using a multi-discriminator parameter to advertise to the Internet a preferred entry point to the public mobile access data network.

41. The method in claim 38, further comprising:
selecting one of the home agents in the virtual home agent network closest to a corresponding node sending data to the mobile node via the Internet to forward data to and from the mobile node.

42. The method in claim 38, wherein one of the home agents in the virtual home agent network is co-located with a foreign agent near a private data access network.

43. The method in claim 32, wherein the home agent and foreign agent routers communicate using a mobile internet protocol (IP) and the tunnel includes a label switched path that uses multi-protocol label switching (MPLS).

44. The method in claim 32, further comprising:
the home agent assigning the mobile node a home address, and
one the foreign agents assigning the mobile node a care-of address,
wherein the home agent associates the home address and the care-of address.

45. The method in claim 44, further comprising:
the home agent establishing the tunnel with the foreign agent using the care-of address using one or more desired tunnel attributes.

46. The method in claim 45, wherein the one or more desired tunnel attributes includes a class of service, bandwidth, traffic type, primary and secondary paths, or selective routing.

48. The method in claim 47, wherein the label switched routers encapsulate incoming data packets with a label, remove a label from outgoing data packets, and route packets by swapping labels at each label switched router along the label switched path.

50. The method in claim 47, further comprising:
aggregating label switched paths at the home agent for plural regional foreign
agents.

52. The method in claim 47, further comprising:
determining a primary label switched path and a redundant, secondary label
switched path corresponding to the tunnel.

53. The method in claim 47, further comprising:
selecting one of two or more label switched paths to balance a traffic load in the
public mobile data access data network.

54. The method in claim 47, further comprising:
setting in one or more hosting foreign agents an address of the home agent.

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57. The method in claim 32, further comprising:
monitoring parameters relating to at least one of use and performance of the data

a control entity establishing a data tunnel across the public mobile access data network between the routing node and a second routing node, and

a forwarding entity for processing and routing packets over the tunnel.

3 60. The routing node in claim 58, wherein the tunnel is a label switched path.

62. The routing node in claim 58, wherein mobile IP packets are transferred over an MPLS tunnel.

64. The routing node in claim 63, wherein the first routing node is a home agent and the second routing node is a foreign agent and wherein the mobile IP controller stores a care-of IP address of the foreign agent hosting the mobile node.

65. The routing node in claim 63, wherein the first routing node is a foreign agent and the second routing node is a home agent and wherein the mobile IP controller stores an IP address of the home agent for the mobile node.

66. The routing node in claim 63, wherein the mobile IP controller determines the route of the label switched path corresponding to the tunnel to be something other than the shortest route.

67. The routing node in claim 63, wherein the mobile IP controller determines a primary label switched path and a redundant, secondary label switched path corresponding to the tunnel.

68. The routing node in claim 63, wherein the mobile IP controller selects a label switched path to balance a traffic load in the public mobile data access data network.

69. The routing node in claim 63, further comprising:
a resource reservation protocol controller coupled to the MPLS controller.

70. The routing node in claim 63, wherein the first routing node is a foreign agent, the second routing node is a home agent, and the mobile IP controller requests the MPLS controller to establish a table including the data tunnel, an address of the home agent, and an address of the mobile node.

71. The routing node in claim 63, wherein the mobile IP controller in the home agent adds one or more mobile node IP addresses to a label switched path having a destination address corresponding to a foreign agent care-of address.

72. The routing node in claim 58, wherein the first routing node is a foreign agent, and wherein the mobile IP controller forwards a mobile node registration to plural home agent routing nodes.

73. The routing node in claim 58, wherein the first routing node is a foreign agent, and wherein the MPLS controller establishes for a single communication with the mobile node plural label switched tunnels to plural home agent routing nodes.

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